National Institute of Environmental Health Sciences

Climate Change and water in Southwestern North America special feature: Water, climate change, and sustainability in the southwest

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Year: 2010
Journal: Proceedings of The National Academy of Sciences of The United States of America. 107 (50): 21256-21262

Abstract:

The current Southwest drought is exceptional for its high temperatures and arguably the most severe in history. Coincidentally, there has been an increase in forest and woodland mortality due to fires and pathogenic outbreaks. Although the high temperatures and aridity are consistent with projected impacts of greenhouse warming, it is unclear whether the drought can be attributed to increased greenhouse gases or is a product of natural climatic variability. Climate models indicate that the 21st century will be increasingly arid and droughts more severe and prolonged. Forest and woodland mortality due to fires and pathogens will increase. Demography and food security dictate that water demand in the Southwest will remain appreciable. If projected population growth is twinned with suburb-centered development, domestic demands will intensify. Meeting domestic demands through transference from agriculture presents concerns for rural sustainability and food security. Environmental concerns will limit additional transference from rivers. It is unlikely that traditional supply-side solutions such as more dams will securely meet demands at current per-capita levels. Significant savings in domestic usage can be realized through decreased applications of potable water to landscaping, but this is a small fraction of total regional water use, which is dominated by agriculture. Technical innovations, policy measures, and market-based solutions that increase supply and decrease water demand are all needed. Meeting 21st-century sustainability challenges in the Southwest will also require planning, cooperation, and integration that surpass 20th-century efforts in terms of geographic scope, jurisdictional breadth, multisectoral engagement, and the length of planning timelines.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3003116

Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Policymaker, Public

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Security, Food/Water Security

Extreme Weather Event: Drought, Wildfires

Geographic Feature:

resource focuses on specific type of geography

Desert

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease, Injury

Infectious Disease: General Infectious Disease

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content